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ABSTRACT

The study deals with various predictors of time spent on dairy subjects by Extension agents and predictors of contacts made by agents with dairy clientele. Purposes were to determine the relationships, if any, between various independent variables and groups of independent variables (agents' background and training, county dairy situation, agents' knowledge of dairying, and interest and attitudes of agents toward dairying) and two major dependent variables (amount of time spent by agents on various groups of dairy subjects and the number of contacts made by agents with dairy clientele). A description of methods used and a three-page summary of findings are presented, with six conclusions based on the findings. It was concluded that the overall best predictor of time an agent would spend and number of contacts he would make with dairymen is the number of Grade A dairymen in the county. (Tables of relationships among variables are appended.) (Author/AJ)

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A Research Summary of a Graduate Study

INFLUENCE OF SELECTED PERSONAL CHARACTERISTICS AND COUNTY SITUATIONAL FACTORS ON TIME ALLOCATED TO DAIRY SUBJECTS BY EXTENSION AGENTS IN SELECTED TENNESSEE COUNTIES

by

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INFLUENCE OF SELECTED PERSONAL CHARACTERISTICS AND COUNTY SITUATIONAL FACTORS ON TIME ALLOCATED TO DAIRY SUBJECTS BY EXTENSION AGENTS IN SELECTED TENNESSEE COUNTIES

by

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August 1973*

ABSTRACT

The specific purpose of this study was to determine the relationships between various groups of independent variables (i.e. background and training of agents, county situational factors, knowledge, interest and attitude of agents and use of recommended dairy practices) and two major dependent variables (i.e. time spent by agents on various groups of dairy subjects and contacts made by agents with dairy clientele).

The study was limited to Tennessee Extension agents who were responsible for the Extension dairy educational program in the counties having at least 40 percent of the total farm income derived from dairying and/or which had an annual income of at least three-quarters-of-a-million dollars.

Data for this study were obtained from (1) Tennessee Extension Management Information System (TEMIS), (2) Extension files, (3) supervisors, administrators and dairy subject matter specialists, (4) county Extension workers, and (5) 391 selected dairy farmers in 39 Tennessee counties.

A Stepwise Multiple Regression Analysis computer program was used to analyze the data. Output from this analysis program included: (1) the

*Date of completion of an M. S. degree thesis on which this summary is based.

coefficient of correlation (r), (2) the coefficient of multiple correlation (R), (3) the coefficient of multiple determination (R^2) and (4) the percent change in R^2. The coefficient of correlation (r) denoted a relationship between two variables while R and R^2 were used to denote correlations between one dependent and two or more independent variables simultaneously.

The findings indicated that neither the agents' background and training nor their knowledge of dairy subject matter was significantly related to the amount of time agents devoted to their dairy Extension program or to the number of contacts made with dairy clientele. These were, however, some indications that agents who had completed fewer hours of college credits in dairying devoted a larger amount of time to their dairy Extension program. Very significant positive relationships were observed between both the amount of time agents spent on dairy subjects and the total number of contacts made with dairy clientele and several measures of the agents' interest in dairying and their attitudes toward dairying. It was the county dairy situation which showed the highest positive relationship with both time agents spent on dairying and the number of contacts they made with dairymen. The total county income from dairying and the number of dairymen in the county each showed a very high positive correlation with both the amount of time agents spent on dairying and the number of dairymen contacted. A very high percent of the variation in time agents spent in dairying and the number of contacts made with dairymen was accounted for by the number of Grade A dairymen in the county.

Implications and recommendations also were made.

A RESEARCH SUMMARY*

I. PURPOSES

This study dealt with various predictors of time spent on dairy subjects by Extension agents and predictors of contacts made by agents with dairy clientele. Purposes were to determine the relationships, if any, between various independent variables and groups of independent variables (i.e. agents' background and training, county dairy situation, agents' knowledge of dairying, and interest and attitude of agents toward dairying) and two major dependent variables (i.e. amount of time spent by agents on various groups of dairy subjects and the number of contacts made by agents with dairy clientele).

II. METHODS USED

Population and Sample

Two populations were studied. The first population consisted of Grade A dairymen in 39 Tennessee counties which had at least 40 percent of their total agricultural income from dairying and/or which had an annual income of at least three-quarters-of-a-million-dollars. The second population consisted of the county Extension personnel in these 39 Tennessee counties that had major responsibility for the dairy Extension work in those counties.

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Sources of Data

Data were obtained from (1) Tennessee Extension Management System (TEMIS), (2) Extension files, (3) Extension supervisors, administrators, and dairy subject matter specialists, (4) college transcripts, (5) county Extension workers, and (6) 391 selected Grade A dairy farmers across Tennessee in 39 counties.

Method of Analysis

A Stepwise Multiple Regression Computer program was used to analyze the data. This analysis gave a Coefficient of Correlation (r) that denoted a relationship between two variables. It also gave a multiple correlation coefficient (R) which showed the relationship between a dependent variable and two or more independent variables. The coefficient of mulitple determination (R^2) was used to show the variance (expressed in percent) in the dependent variable that is dependent upon, associated with or predicted by independent variables. Finally, the analysis gave the percent change in R^2 which is the variance accounted for by each individual independent variable.

III. SUMMARY OF FINDINGS

Influence of Agents' Training on Time Spent on Dairy Subjects

The amount of time agents spent on dairy subjects was influenced by the hours of college credits completed in dairying. Agents who completed more dairy courses devoted less time to their dairy Extension program. Other variables as to background and training of agents appeared to have little influence on the amount of time agents devoted to dairying. (See Appendix Table I).

Influence of Agents' Interest and Attitude Scores on Time Spent on Dairy Subjects

Several measures of the interest and attitudes of agents toward dairying showed a significant positive relationship with the time agents spent on all dairy subjects. Agents who scored high on the dairy job satisfaction scale also spent more time on their Extension dairy program than did agents who made lower job satisfaction scores. (See Appendix Table II).

Influence of Agents' Scores on Knowledge of Dairying Tests on Time Agents Spent on Dairy Subjects

Agents' knowledge of various dairy subjects seemed to have little influence on time they devoted to those subjects. There was a significant positive relationship, however, between agents' knowledge score on general dairying and the amount of time devoted to all dairy subjects. (See Appendix Table III).

Influence of County Situation in Dairying on Time Agents Devoted to Dairying

The number of Grade A dairymen in the county and the percent of county farm income from dairying accounted for a rather high percentage (58.8 percent) of the variation in the amount of time agents devoted to their Extension dairy program. Agents located in counties having more Grade A dairymen spent more time on dairy subjects than did agents having fewer Grade A dairymen. (See Appendix Table IV).

Influence of Background and Training of Agents on the Total Number of Contacts Agents Made with Dairymen

The background and training of agents had no influence on the total number of contacts made with dairymen. Variables included in this analysis were: (1) number of hours of college credits in dairying completed by the agent, (2) highest degree earned, (3) undergraduate grade point average, (4) number of years in Extension and (5) number of years the agent had been in his present county position. (See Appendix Table V).

Influence of Agents' Interest in and Attitude Toward Dairying on the Total Number of Contacts Agents Made With Dairymen

The total number of contacts made by agents with dairymen was significantly influenced by the agents' interest in and attitude toward dairying. The number of contacts were significantly higher when (1) the agent felt that dairymen were receptive to his program, (2) the agent had high self-confidence in dairying, (3) the agent was satisfied with his dairy program, (4) the agent felt dairying was important to his county, and (5) the agent was given a high effectiveness rating by dairy specialists and district supervisors. (See Appendix Table V).

Influence of Selected County Dairy Situation Factors on the Total Number of Contacts Agents Made with Dairymen

The number of contacts agents made with dairymen was very significantly related to the county situation concerning dairying. Total number of dairy contacts increased with an increase in each of the following: (1) number of

Grade A dairymen in the county, (2) total county income from dairying, (3) percent of county farm income from dairying, (4) number of dairy farms in the county, and (5) number of men Extension agents in the county. These five county situation variables accounted for over 71 percent of the variation in the number of dairymen contacted by the agents. (See Appendix Table V).

IV. CONCLUSIONS

Based on the findings of this study the following conclusions were made:

1. It was concluded that none of the selected background and training factors or agents' knowledge of dairying could be used to effectively predict time agents would spend on dairying or the number of contacts he would make with dairymen.

2. It was concluded that selected factors concerning the agents' interest in and attitudes toward dairying could be used to effectively predict the amount of time agents would spend on their Extension dairy program.

3. It was concluded that selected county dairy situational factors could be used to effectively predict the amount of time agents would spend on their Extension dairy program.

4. It was concluded that selected county diary situational factors could be used to effectively predict the number of contacts an agent would make with dairymen.

5. It was concluded that selected measures of the agents' interest in and attitudes toward dairying could be used to effectively predict the number of contacts agents would make with dairymen.

6. Finally it was concluded that the overall best predictor of time that agents would spend and the number of contacts he would make with dairymen is the number of Grade A dairymen in the county.

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TABLE I

RELATIONSHIP BETWEEN BACKGROUND AND TRAINING OF AGENTS AND AMOUNT OF TIME AGENTS SPENT ON VARIOUS DAIRY SUBJECTS

Background and Training of Agents	Amount of Time Agents Spent on Dairy Subjects					
	Breeding	Feeding	Management	Records	Other	All Dairy Subjects
	Correlation Coefficients (r)					
No. hours of undergraduate credits in dairy subjects	-.30[c]	-.31[c]	-.14	.06	-.23	-.29[d]
No. hours of graduate credits in dairy subjects	.36[c]	-.02	-.02	-.27[d]	-.01	-.01
Highest degree earned	.10	-.10	-.20	-.24	-.01	-.09
Undergraduate grade point average	-.03	-.18	-.05	-.26[d]	-.03	-.13
No. years in Extension	-.13	.02	-.04	--	--	-.08
No. years in present position	-.02	.13	-.06	--	-.18	-.07

[c]Significant at the .05 level

[d]Significant at the .10 level

TABLE II

RELATIONSHIP BETWEEN AGENTS' INTEREST AND ATTITUDE SCORES AND AMOUNT OF TIME AGENTS SPENT ON VARIOUS DAIRY SUBJECTS

Agents' Interest and Attitude Scores	Amount of Time Agents Spent on Dairy Subjects					
	Breeding	Feeding	Management	Records	Other	All Dairy Subjects
	- - - - - - - - - - - Correlation Coefficients (r) - - - - - - -					
Importance of dairying score	.23	.23	.37[c]	.14	.41[b]	.48[a]
Score on interest in dairying	.01	--	.33[c]	.22	.53[a]	.52[a]
Score on knowledge of dairying	.20	--	-.09	.16	.17	.13
Decision-making test score	-.11	-.05	.04	-.26[d]	-.05	-.06
Self-confidence score in dairying	.06	.16	.32[c]	--	.42[b]	--
Effectiveness rating score	-.06	--	.04	.14	.23	.19
Interest-Attitude dairy scale	.13	.22	.32[c]	.21	.53[a]	.55[a]
Dairy job satisfaction score	.13	.26[d]	.21	.15	.45[b]	.44[b]
Receptiveness of clientele score	.07	.19	.26[d]	.25[d]	.49[a]	.49[a]

[a]Significant at the .001 level

[b]Significant at the .01 level

[c]Significant at the .05 level

[d]Significant at the .10 level

TABLE III

RELATIONSHIP BETWEEN AGENTS' SCORES ON VARIOUS DAIRY KNOWLEDGE TESTS AND AMOUNT OF TIME AGENTS SPENT ON VARIOUS DAIRY SUBJECTS

Agents' Scores on Various Dairy Knowledge Tests	Amount of Time Agents Spent on Dairy Subjects					
	Breeding	Feeding	Management	Records	Other	All Dairy Subjects
	Correlation Coefficients (r)					
Buildings	.30[c]	.28[d]	-.06	.25[d]	.15	.22
Abnormal milk	-.26[d]	-.34[c]	-.17	.04	--	-.20
Nutrition	.26[d]	--	--	.03	.08	--
General dairying	.25[d]	.06	.18	.26[d]	.29[d]	.31[c]
Waste disposal	.01	.09	.05	.02	-.07	-.02
Artificial breeding	.20	-.03	-.15	-.04	.12	.01
Farm planning	.12	-.07	.16	.43[b]	.24	.23
Record keeping	.08	--	-.21	--	.10	.06
Quality feeds	.07	.09	-.21	.08	-.01	-.05
Communications	.06	.12	--	-.21	.09	--
Dairy management	.01	.16	-.05	-.19	-.04	-.03
Score on Ext. Program Dev. Test	--	-.01	-.11	.14	-.07	-.03

[b]Significant at the .01 level

[c]Significant at the .05 level

[d]Significant at the .10 level

TABLE IV

RELATIONSHIP BETWEEN COUNTY SITUATION IN DAIRYING AND AMOUNT OF TIME AGENTS SPENT ON VARIOUS DAIRY SUBJECTS

County Situation in Dairying	Amount of Time Agents Spent on Dairy Subjects					
	Breeding	Feeding	Management	Records	Other	All Dairy Subjects
	Correlation Coefficients (r)					
Total county income from dairying	.36[c]	.42[b]	-.42[b]	.18	.58[a]	.65[a]
Number male Extension agents in county	-.19	.25[d]	.08	-.11	.05	.05
No. Grade-A dairymen in county	.28[d]	.27[d]	.53[a]	.27[d]	.72[a]	.75[a]
Lbs. milk per Grade-A dairyman	.11	.32[c]	.04	.12	.14	.22
No. cows in Grade-A herds - co. av.	-.14	-.16	-.25[d]	.28[d]	-.19	-.19
No. dairy farms in county	.28[d]	.34[c]	.17	.05	.33	.39[b]
Percent of county farm income from dairying	.23	--	.59[a]	.06	.58[a]	.64[a]
Percent of Grade-A dairymen using 21 recommended dairy practices	.03	.08	-.04	-.04	-.14	-.07

[a] Significant at the .001 level

[b] Significant at the .01 level

[c] Significant at the .05 level

[d] Significant at the .10 level

TABLE V

RELATIONSHIP BETWEEN SELECTED CHARACTERISTICS OF EXTENSION AGENTS AND SELECTED COUNTY SITUATION FACTORS AND THE TOTAL NUMBER OF CONTACTS AGENTS MADE WITH DAIRY CLIENTELE

Selected Characteristics of the Agent and the County	Total Number of Dairy Contacts
Background and Training of Agents	Correlation Coefficient (r)
Highest degree earned	.19
No. hrs. ungrad. credit dairy	-.14
Undergraduate grade point average	.17
No. years in Extension	.04
No. years in present position	.01
No. hrs. grad. credit dairy	.05
Agents' Interest and Attitude	
Receptiveness of clientele score	.60[a]
Effectiveness rating score	.26[d]
Importance of dairying score	.50[a]
Score on multiple choice test	.06
Self-confidence score in dairy	.51[a]
Dairy job satisfaction score	.43[b]
Decision making test score	.02
Interest-attitude dairy scale	.59[a]
Selected County Situational Factors	
No. of Grade A dairymen in county	.68[a]
No. of men Extension agents in county	.41[b]
Percent county farm income from dairying	.57[a]
No. of dairy farms in county	.28[d]
Total county income from dairying	.68[a]
No. of cows in Grade A herds, county average	-.22
Lbs. of milk per Grade A dairyman, county average	.14
Percent of Grade A dairymen using 21 practices	.06

[a]Significant at the .001 level
[b]Significant at the .01 level
[c]Significant at the .05 level
[d]Significant at the .10 level